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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHACE, CHRISTIAN

ART UNIT	PAPER NUMBER
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2187

DATE MAILED: 02/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/824,083	Applicant(s) SADE ET AL.	
	Examiner Christian P. Chace	Art Unit 2187	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-19,21-33 and 35-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-19,21-33 and 35-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This Office action has been issued in response to amendment filed 17 December 2004. Claims 1-3, 5-19, 21-33, 35-44 are pending. Applicants' arguments have been carefully and respectfully considered, and some are persuasive, while others are not. In addition, new grounds for rejection have been occasioned by the instant amendment. Also, examiner has discovered further grounds for rejection for rejection of claim 19. Because the grounds for rejection of claim 19 are not necessitated by the instant amendment, this action has NOT been made final.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, for example, the control data being replicated in said first and said second cache memories when said corresponding disk data has not been modified (claims 1, 18, and 31), and, said corresponding disk data being only in one of said first and second cache memories when said corresponding disk data has not been modified and said control data is replicated in said first and second cache (claims 42-44) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

Art Unit: 2187

number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 31-33 and 35-41 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims recite "a computer readable medium." As applicants have not defined this "computer readable medium" to be within the scope of patentable subject matter (i.e., to exclude carrier waves and the like), it must be rejected as being non-statutory subject matter.

Claim 19 is precluded by language of 35 USC 101, which sets forth statutory classes of invention in alternative only. Claim 19 depends upon, and thereby inherently includes, all of the limitations of same. Claim 18 is directed to an apparatus, being a

Art Unit: 2187

system comprising a first cache, a second cache, and cache selection hardware. Claim 19 is directed an access balancing technique, comprising machine executable code.

While it has been long settled that a single patent may include claims directed to more than one statutory class of invention (e.g., a claim to an apparatus and a separate claim to a method of using or producing the apparatus), there is no basis found for permitting a combination of two separate and distinct statutory classes of invention in a single claim. *Ex Parte Lyell*, 17 USPQ2d 1548; *Expanded Metal Co. v. Bradford*, 214 US 366, 385 (1909), cited therein.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3, 5-7, 12-19, 21-33, and 35-44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically with respect to independent claims 1, 18, and 31, the instant amendment recites, "wherein, *when* said corresponding disk data has not been modified, said control data is replicated in said first and said second cache memories." (emphasis added). However, no such limitation on the replication is disclosed in the disclosure as originally filed. Indeed, the control data is disclosed as being copied to

Art Unit: 2187

both caches regardless of modification status. More specifically, at page 11, in lines 10-11 of the specification as originally filed, it recites, "The control data for the slots is written to both of the cache memories." There is no limitation as to whether or not such copying *depends* upon the modification status of the corresponding disk data.

Claims 2-3, 5-7, 12-17, 19, 21-30, 32-33, and 35-44 depend upon the instant claims and are rejected for at least the reasons set forth supra with respect to same.

Claims 42-44 recite, "when said corresponding disk data has not been modified and said control data is replicated in said first and said second cache, said corresponding disk data is only in one of said first and second cache memories." This limitation does not appear to be present or even suggested in the originally filed disclosure.

Claims 18-19, 21-33, 35-41, and 43-44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With respect to independent claims 18 and 31, the claims recite:

"...is replicated in said first and said second cache memories independent of whether said corresponding disk data is included in both said first and second cache memories..."

The instant specification discloses, "...wherein data contained in said first and second cache memories includes control data and corresponding disk data, said control data being replicated in said first and said second cache memories..."

However, the instant specification does not disclose the replication being, "...independent of whether said corresponding disk data is included in both said first and second cache memories..."

In fact, the instant specification recites, at page 18 in lines 1-2, "[T]hat is, every time data is read from the disk storage area [disk data] to the cache (which is a write to the cache), or data that is in the cache is modified by the host, the data is written to both of the cache memories."

Also, page 16, lines 14-16, recites, "Following the step 114 is a step 116 where the control data for a particular slot, in both of the memories 22, 24, is marked to indicate that the slot is write pending, indicating that the data has been modified while stored in the cache. As discussed above, the control data is written to both the primary and secondary storage areas."

Accordingly, it would appear from the instant specification, that the control data is, in fact, actually dependent on whether the disk data is included in both of said first or second memories, as the disk data is written to both of the caches memories, as is the control data for that disk data.

The remaining claims listed supra depend upon the instant claims and are rejected for at least the reasons set forth supra with respect to same.

Claims 31-33 and 35-41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not provide an adequately written description of a computer program product **which is stored on a computer readable medium**. While a computer program product is disclosed, storing it on a computer readable medium is not disclosed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18-19, 21-33, 35-41, and 43-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to independent claims 1, 18, and 31, as discussed supra, the instant specification does not disclose the control data replication being independent of the disk data being stored in both caches.

In addition, examiner is unsure what applicants are referring to by the term "independent." As the control data appears to be related to the disk data by describing it, examiner is unsure how it can then be independent of that data.

Would applicants be attempting to claim that it doesn't matter whether the disk data is in both caches or just one – either way, the control data is stored in both

Art Unit: 2187

cache? If this is the case, then applicants are encouraged to rewrite the claim language to more exactly and concisely recite that fact. However, examiner is unsure whether that assertion would be adequately described in the specification – applicants would be strongly encouraged to point out where in the specification this assertion would be supported, if, indeed, that is applicants invention.

The remaining claims depend upon the instant claims and are rejected for at least the reasons set forth supra with respect to same.

With respect to claim 19, the claim purports to be both machine and process and is ambiguous and therefore does not particularly point out and distinctly claim the subject matter of invention.

Specifically, in combining two separate statutory classes of invention in a single claim, would raise serious questions for a manufacturer or seller of a system for managing data in a cache like that claimed by applicants regarding infringement. Such manufacturer or seller would have no indication at the time of making or selling the structure set forth in claim 19 (via dependence upon 18) whether they might later be sued for contributory infringement because a buyer/user of the system later performs applicants claimed method of use. Accordingly, claim 19 is not sufficiently precise to provide competitors with an accurate determination of the metes and bounds of protection involved so that an evaluation of the possibility of infringement may be ascertained with a reasonable degree of certainty, as discussed by the court in *In re Hammack*, 427 F.2d 1378, 166 USPQ 204 (CCPA 1970), which is cited in *In re Lyell*, as cited supra.

Allowable Subject Matter

Claims 8-11 are allowed.

Response to Arguments

With respect to applicants' argument that the rejections under 35 USC 101 have been addressed by the instant amendments, examiner respectfully disagrees. The claims still recite, "a computer readable medium." The specification does not *limit* that computer readable medium to a tangible embodiment. Accordingly, when the subject matter of a claim may include an intangible embodiment, such as a carrier wave, that claim must be rejected under 35 USC 101. For example, the specification, beginning at page 4, line 1, does not even discuss the executable code being stored on any medium whatsoever, much less limited to a tangible one.

With respect to applicants' argument that the rejection of claims 1-3, 5-19, 21-33, and 35-41 under 35 USC 112, 1st paragraph has been addressed by amendments made instantly, examiner respectfully disagrees with respect to claims 18-19, 21-33, 35-41, and 43-44.

Specifically, the claims were rejected because the limitation, "...the control data being replicated in said first and second cache memories independent of whether said corresponding disk data is included in both of said first and second cache memories..."

This limitation was only removed from independent claim 1, and remains in independent claims 18 and 31. Accordingly, the rejection of same has not been overcome.

In addition, applicants continue at the end of page 16 and into page 17 of the instant remarks to cite the specification at page 11, lines 7-16, to provide the written description of the newly-added limitations in independent claims 1, 18, and 31. However, as discussed supra with respect to same, examiner does not agree that this citation in the instant specification describes the instantly claimed limitation.

With respect to applicants' assertion that the rejection of claims 1-3, 5-19, 21-33, and 35-41 under 35 USC 112, 2nd paragraph has been addressed by the instant amendment, examiner respectfully disagrees with respect to claims 18-19, 21-33, 35-41, and 43-44.

Specifically, the claims were rejected because the limitation, "...the control data being replicated in said first and second cache memories independent of whether said corresponding disk data is included in both of said first and second cache memories..."

This limitation was only removed from independent claim 1, and remains in independent claims 18 and 31. Accordingly, the rejection of same has not been overcome.

With respect to applicants' argument that Dewey and Kurokawa appear silent with regard to any disclosure or suggestion or replicating control data when the corresponding disk data has not been modified, examiner agrees.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian P. Chace whose telephone number is 571.272.4190. The examiner can normally be reached on MAXI FLEX.

Art Unit: 2187

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on 571.272.4201. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christian P. Chace
Examiner
Art Unit 2187